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TABANUS ARENIVAGUS (DIPTERA: TABANIDAE) ATTRACTED TO ULTRAVIOLET LIGHT SUCTION TRAPS IN ISRAEL

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ABSTRACT. Suction blacklight trappings have been conducted at Bet Dagan since 1978. *Tabanus arenivagus* has been caught only during 1992–94. Seventy-one specimens, all females, were caught by these traps, demonstrating that females are attracted to the wavelength range of 340–380 nm radiated by the mercury-vapor lamps of these traps. This constitutes a new finding among the Tabanidae species of the Mediterranean region.

Only a limited number of studies have been done on the Tabanidae of Israel and none have been done on their visual attraction (Austen 1920, 1922, 1924; Buxton 1924, Philip 1952). According to Theodor (1965) and Freidberg (1988), there are 34 species of Tabanidae in Israel and the distribution of *Tabanus arenivagus* Austen is restricted to the coastal plain from near Gaza (31°31′N, 34°27′E) in the south to the dunes north of Akko (32°55′N, 34°27′E). Theodor (1965) examined only 25 specimens of this species from 10 localities, which were collected from July to October.

Anthony (1959) used an ultraviolet light trap with a wavelength of 2,800–3,800 Å (= 280–380 nm) and caught 23 species of tabanids in Florida; the majority of the specimens were males. The predominant species was *Tabanus lineola* Fabricius followed by *Chlorotabanus crepuscularis* Bequaert. Hanec and Bracken (1962) reported that adult tabanids were photopositive to light between 380 and 430 nm and between 500 and 550 nm. The importance of ultraviolet reflectance in tabanid host-seeking was recently studied by Hribar et al. (1991). In the years 1992–94, 71 females of *T. arenivagus* were caught by the DuToit trap (DuToit 1944) equipped with a mercury-vapor (blacklight) lamp (Philips HPW 125W-TS, Belgium) that radiates in the wavelength range 340–380 nm (Table 1). The fact that our trap caught only females indicates that this wavelength resembles the one reflected from hosts. Suction blacklight traps have been regularly used in surveys of dipteran

Table 1. Females *Tabanus arenivagus* caught by suction light traps with blacklight source.

Locality	Date of trapping	No. of traps operated	No. of flies caught
Bet Dagan (Volcani Center), (32°00′N, 34°49′E), cow shed	Sept. 13–14 1992	3	9
	Sept. 15–16, 1992	2	8
	Sept. 20–21, 1992	2	2
	Oct. 4–5, 1992	1	1
	Oct. 8–9, 1992	2	4
	Sept. 20–21, 1993	1	2
	Sept. 23–24, 1993	2	1
	Sept. 26–27, 1993	3	4
	Sept. 27–28, 1993	3	4
	Sept. 28–29, 1993	3	6
	Oct. 11–12, 1993	3	1
	Sept. 18–19, 1994	3	4
	Oct. 11–12, 1994	3	3
	Nov. 1–2, 1994	3	1
Bet Dagan (Vet. Inst.), donkey stable, cow shed	Sept. 13–14, 1992	1	1
	Sept. 15–16, 1992	1	1
Gan Soreq (31°57′N, 34°46′E), turkey run	Sept. 11–12, 1993	3	5
	Sept. 13–14, 1993	3	3
	Sept. 18–19, 1993	3	11

vectors, conducted since 1973 in various localities within different geographical and ecological zones in Israel. These localities probably have a diversity of tabanid breeding sites and yet no tabanids were detected in the blacklight suction trap catches. The mercury-vapor lamp used in these surveys was the HPW 125 WE (Philips, Holland) or its newer version HPW 125-TS (Philips, Belgium). At sites in Bet Dagan suction blacklight traps have been regularly used for light trapping since 1978. During one year (April 1, 1981–March 31, 1982), 3 Monks Wood suction light traps fitted with low-intensity blacklight tubes (Philips TL 6 W05) were operated daily at Bet Dagan (Braverman et al. 1985, Braverman and Linley 1993) but no tabanids were detected. The attraction of tabanid species to ultraviolet light has already been established and it is probably one of their host-location cues.

In the present study covering 2 years about 3 times more specimens of *T. arenivagus* were caught by the mercury-vapor lamp suction traps than by Theodor (1965), who based his study on material collected from 10 localities during many years. It was found that the activity of this species extends until November. A suggested explanation for the fact that this species was caught only in the years 1992–94 and not before lies in the intensive ecological changes in the area due to extensive urbanization, which have probably created favorable breeding sites for *T. arenivagus*.

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